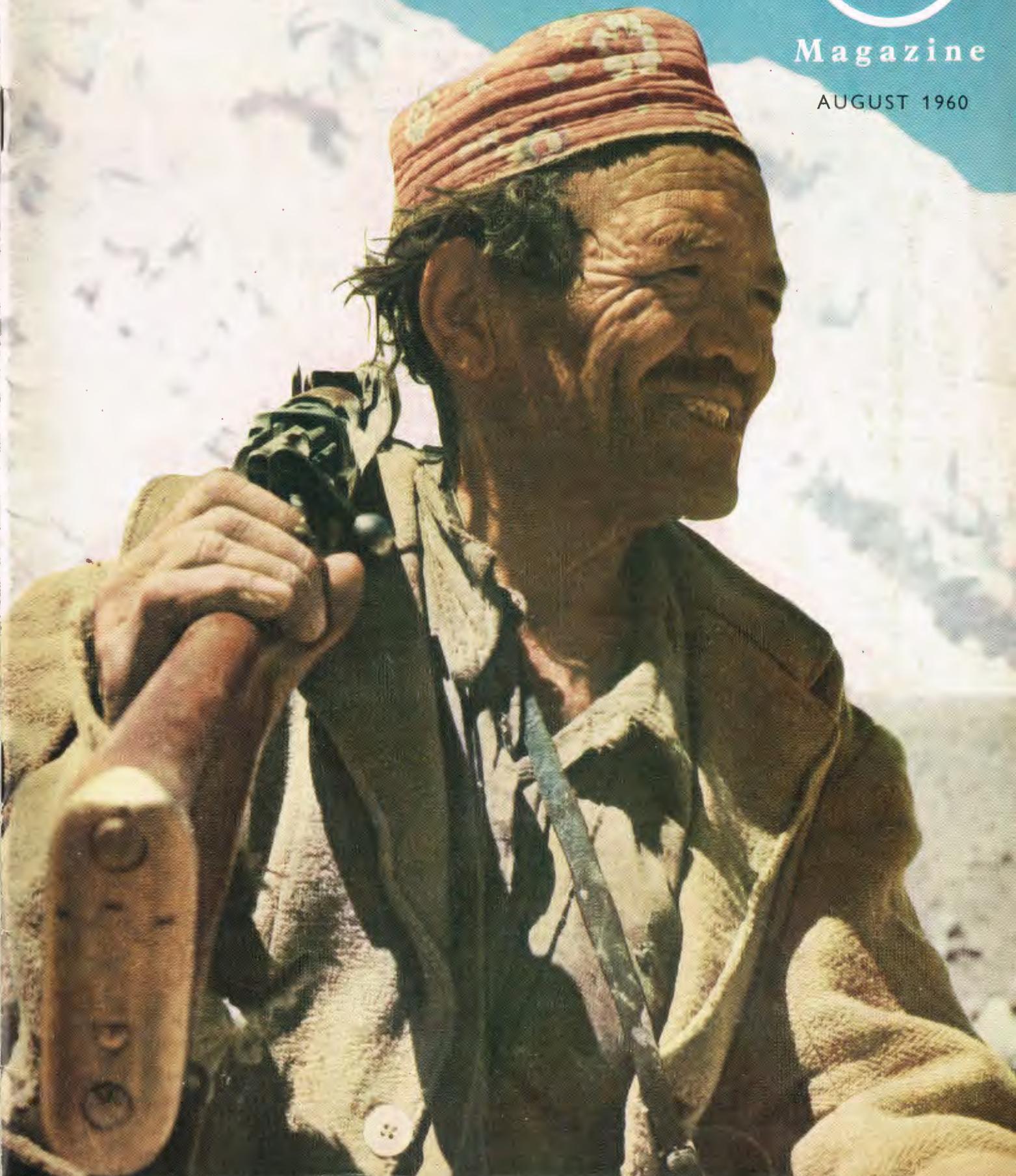




Magazine

AUGUST 1960



By Mark Abrams

The I.C.I. Magazine, price twopence, is published for the interest of all who work in I.C.I., and its contents are contributed largely by people in I.C.I. Edited by Sir Richard Keane, Bt., and printed at The Kynoch Press, Birmingham, it is published every month by Imperial Chemical Industries Limited, Imperial Chemical House, Millbank, London, S.W.1 (Phone: VICtoria 4444). The editor is glad to consider articles and photographs for publication, and payment will be made for those accepted.

VOLUME 38 NUMBER 284

# The I.C.I. Magazine

AUGUST

1960

## Contributors



**S. P. Chambers** became Chairman of I.C.I. last March in succession to Sir Alexander Fleck. He joined the Board of I.C.I. in July 1947 and became Finance Director in the following year and a Deputy Chairman in 1952. He was head of the Finance Division of the Control Commission for Germany in 1945-47 and is a former member of the Board of Inland Revenue.



**John I. Edwards** joined I.C.I. from Cambridge and is a construction engineer at Wilton Works. He took part in the 1955 Cambridge Spitsbergen Expedition and in the ill-fated expedition to the Batura Mustagh region of the Himalayas last year, of which there are only two survivors.



**Margaret Farrell** follows up her account in last month's Magazine of Plastics Division's exhibition at Moscow and contributes her impressions of meeting the Muscovites. She works in Plastics Division's Publicity Department.



**R. S. Little** is Commercial Director of I.C.I. Hyde Ltd., where he also looks after the Technical Service and Development Department. After graduating at St. Andrews University in 1934 he joined I.C.I. at Billingham and later worked in various Regional Selling Offices both before and after war service. He came to Hyde in 1949. A tennis "blue," his other interests are golf, reading and travel.



**George Ordish** is now a consultant for Pharmaceuticals Division after spending several years working for Central Agricultural Control. He joined I.C.I. in 1927. His latest book, "The Living House," published this summer, is selling well. He is widely known for his enthusiasm for home-made Kentish wine, made from his own Kentish-grown grapes.

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FRONT COVER: Shah Mohammed, Shikari and chief coolie of the Batura expedition, by H. G. Stephenson, late of Wilton Works (Rolleiflex Camera, Agfa Negative colour film)



**O**N the first Sunday of this month several thousand people assembled in San Francisco and settled down to a conference that would last a whole week. They came from almost every country in the world, and the subject before them was old people. They were, in fact, participants at the Fifth Congress of the International Association of Gerontology; they represented a wide range of experts—doctors, biologists, social workers, economists, civil servants, psychologists—and their problems overrode national boundaries. Most industrialised countries are faced with the same facts—the population already contains a high proportion of old people, their numbers will rise sharply over the next ten years, and the State has assumed many responsibilities for their well-being.

The position in Britain is typical. Today, out of a total population of slightly over 50 million people, there are nearly 6 million aged 65 or more; in ten years' time, with a total population of 53 million, there will be nearly 7 million such old people.

**A**MONG the many problems created by this state of affairs is the sordid but very important one of finance. There are now 5½ million retired pensioners in Britain, and between them they receive roughly £650 millions a year—or, on average, about £2 each a week. For anyone with no other resources a weekly income of £2 does not go very far: after the week's food and fuel have

been paid for, the average old person with no income other than his State pension is likely to find that there is practically nothing more he can afford.

That a great many old people are, in fact, in just this position is shown by the latest report of the National Assistance Board. This showed that at the end of 1959 the Board was paying supplementary allowances to 1,200,000 old people and the average additional weekly allowance was 24s. In the light of these facts it is not surprising that every political party is committed to doing something about State retirement pensions.

**B**UT what? An extra pound a week for every old age pensioner? Almost certainly not. It is slowly becoming clear to more and more people that this sort of all-round flat-rate increase for everybody is both difficult and unnecessary. It is difficult because of the cost. To give every one of today's 5½ million retired pensioners an additional £1 a week would cost—after allowing for the saving on National Assistance—nearly £250 million a year. If this were met entirely out of

natives—either constantly raising taxation so as to provide the necessary money or else leaving millions of old people on the edge of want so as to hold down the already heavy burden of taxation.

**B**UT this is an unnecessary dilemma. It is one of our own making and one we can escape from if we openly abandon the present approach and go back to a much older principle of distribution—to each according to his needs. The truth is that inequality of incomes is just as common among old people as it is among the rest of the population. Many of them already enjoy non-State pensions and many have for most of their working lives enjoyed substantial incomes from which they have been able to save. Their needs are already adequately—and in some cases amply—covered. Surely the taxpayer should not be called upon to raise their State pensions; nor should less fortunate old age pensioners be deprived of the help they need. We can avoid both by sticking to a comparatively low minimum State pension for all, with generous additions for those in need.

This policy for old age is already receiving tacit support. It may well be that the principle should be extended to the whole range of benefits provided by the State—education, health, housing, etc. Indeed, it is arguable that only by dropping a policy of superficial ideological equality can the Welfare State go forward and cope with its genuine problems.

*The opinions expressed in this article are not necessarily those of the Company*



# New Horizons for PLASTIC COATINGS

By R. S. Little

Fabrics coated with plastic—such as cotton cloth or nylon coated with p.v.c.—and p.v.c. foil laminated to steel, thus eliminating painting, are a fast developing market. I.C.I. is right in the forefront here, and big opportunities lie ahead.

OUT of fifty firms making coated fabrics in Britain, I.C.I. (Hyde) Ltd. is the biggest. With new buildings going up at Hyde to house ultra-modern machinery, new products regularly being introduced to the market, new developments such as plastic foil for covering steel sheet, and the fattest order book of its existence on hand, it is obvious that this I.C.I. offshoot is going to grow dramatically in the next few years. The question remains, how will it grow? Will it try to capture an even bigger share of the car upholstery market? Will it go all out for the furnishing trade? Or will it diversify and find new markets altogether?

First, a little background information. I.C.I. (Hyde) is, of course, the old I.C.I. Leathercloth Division under a different guise—one assumed some two years ago for administration reasons—and successor, through

Nobel Industries (one of the merger companies), to the three firms that pioneered the production of coated fabrics in Britain.

To some people, unfortunately, leathercloth still means nothing but 'Rexine'—a word that has almost passed into the language since it was registered as a trade mark 61 years ago. 'Rexine' was—and is—cotton cloth coated with nitrocellulose dope and embossed to look like leather, and it rode to fame on the back of the twentieth-century mass-production boom. Cars, luggage, handbags, bookbindings, even shoes, all had to be made quickly and cheaply; and leather—uncertain in size, quality and price—did not lend itself to the job. Thousands of miles of 'Rexine' found their way on to books, chairs and sofas, and into ships and trains.

Today I.C.I. (Hyde) still makes 'Rexine' and sells



One of the first hats made in 'Vynide,' the p.v.c.-coated fabric which looks and feels like leather. Costing only 24s 11d., it is rainproof and easily sponged clean. Designed by Jacoll in pull-on style with a buckled tab at the front, in pastel shades, red, tan, black and white. Stockists include the Lewis Group (Leicester, Birmingham, Glasgow), Bourne and Hollingsworth, and Selfridges.

it—largely for books and cases—from Paisley to Pernambuco. And you certainly cannot afford to sneer at a product that still holds the place it does in the market for coated fabrics. In the words of the Commercial Director at Hyde: "Some may say it's a dying animal, but if so it's a pretty healthy one."

Nevertheless, 'Rexine' is outsold nowadays many times over by Hyde's chief bread-and-butter product, 'Vynide.' 'Vynide' is cotton cloth coated with p.v.c. plastic, and when it was first introduced after the war it was simply a more expensive alternative to 'Rexine.' But its advantages—it doesn't catch fire easily, it stands up to repeated flexing without cracking, and lasts well in all climates—soon put it into a category of its own. It outsold 'Rexine' for the first time in 1954 and now accounts for over half of I.C.I. (Hyde)'s turnover.

'Vynide,' in short, has been fantastically successful, not only as a replacement for the old nitrocellulose-coated fabrics, but in quite new applications, from



'Vynide' coat styled by Harella, selling at approximately £9 9s. in the colours illustrated above





1 'Vynide' for travel goods

2 } 'Vynide' for kitchen furniture

3 } 'Vynide' for furniture upholstery and car seating

4 } 'Vynide' for fashion clothing

5 } 'Vynide' for mural decoration

6 } 'Vynair' for furniture

7 } 'Vynide' wood effect for mural application

11 'Vynide' mural effect and car headlining

12 } 'Vynair' for radio speaker grilles

13 }

14 } 'Vynide' wood effects—mural

15 } 'Vynide' for mural application

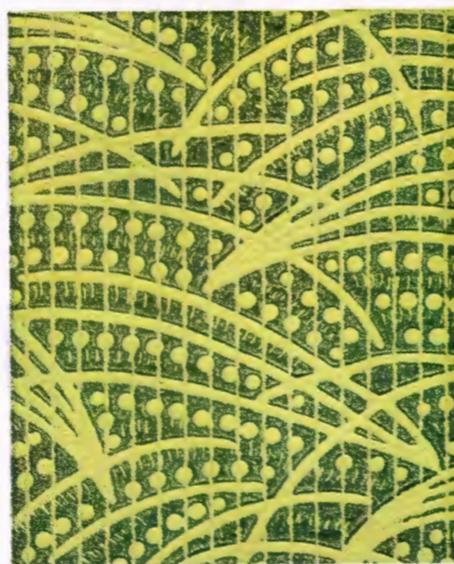
16 } 'Vynide' for protective clothing

17 } Mural 'Vynide'

18 } 'Hydex' for protective clothing



**Ballroom balcony** in the Hotel Leofric, Coventry, where 'Vynide' is used with a padded effect. Most of the hotel was finished in mural 'Vynide'; even the built-in wardrobes were faced with it. The hotel, opened in 1955, is owned by Ind Coope Ltd., and the 'Vynide' still looks fresh and clean.



A "still" from the 'Vynair' advertising film presented throughout the country last spring and to be shown again in the autumn. 'Vynair' is a breathable p.v.c.-coated fabric especially suitable for furniture



**The auditorium** of the 38,000-ton "Rotterdam," the latest ship of the Holland-America line. The front of the balcony is in red 'Vynide' and the ceiling in beige, while all the seats are backed in grey 'Vynide.' Large quantities of 'Vynide' were also used in cabins, restaurants and foyers. The 45,000-ton "Canberra," the ultra-modern ship of the P. & O. Line now under construction, is also using 'Vynide' extensively.



women's coats to wall coverings. It lends itself to clean colours and crisp designs, and is made in many forms, from a thin mural grade to the grades used for luggage. Much of it is still made to look like leather, because that is what the trade demands. But it has plenty of virtues of its own without borrowing from leather, and one can expect that in due course they will be allowed to speak more and more for themselves.

A logical development from 'Vynide' is 'Vynair'—the first coated fabric of its kind to be made in Britain. Partly porous, and thus what you might call (for want of a better word) "breathable," 'Vynair' was a big technical advance—and one that the furniture trade was not slow to appreciate. You will also come across it on the speaker grilles and cabinets of radio sets.

If 'Vynide' and 'Vynair' provide today's bread and butter for I.C.I. (Hyde), will they also provide tomorrow's jam? *I.C.I. is by far the largest supplier of coated fabrics to the British motor industry.* Supplying 'Vynide' in bulk to the motor firms ensures that the modern machinery at Hyde earns its keep. But recessions can always intervene, and the development and design specialists at Hyde are seeing to it that 'Vynide' gains a strong position in other fields as well. It is now being used extensively on walls in ships, hotels, schools and other institutions; for example, one London hotel has just used 10,000 square yards.

#### Capital Expenditure

On the face of it, mural 'Vynide' is more expensive than all but the more recherché wallpapers. But looked at—as a hotel looks at it—as an item of capital expenditure, it is well worth while. It will not scratch or stain, and cleans easily with soap and water. This means that a room, instead of being in the decorators' hands for a week, need only be emptied for a few hours. And it lasts for many years.

With 'Vynide' and 'Vynair' I.C.I. has carved out for itself an important share of the furniture market—an intensely competitive one. Whereas 'Rexine' was a cheaper alternative to leather, the price and scarcity of leather today rule it out for all but the most expensive furniture, and coated fabrics must compete directly with conventional fabrics.

'Vynair' has now made an important break-through into the territory beyond the cheap three-piece suite: its comfort and appearance, quite uncharacteristic of "leathercloth," have broken down the prejudice against coated fabrics that existed among makers of

better-class furniture—or the prejudice that they felt existed among their customers. And in the matter of design 'Vynide' and 'Vynair' have been forging ahead. A new mural 'Vynide' design, *Pierrot*, was recently awarded a Duke of Edinburgh's Award by the Council of Industrial Design.

Heavy-duty coated fabrics are a comparatively new development, and one with an obvious future. In 'Hydex' the coating is p.v.c., but a tough nylon base has been substituted for the traditional cotton. This gives it durability combined with lightness—invaluable for industrial uses.

#### Big Savings

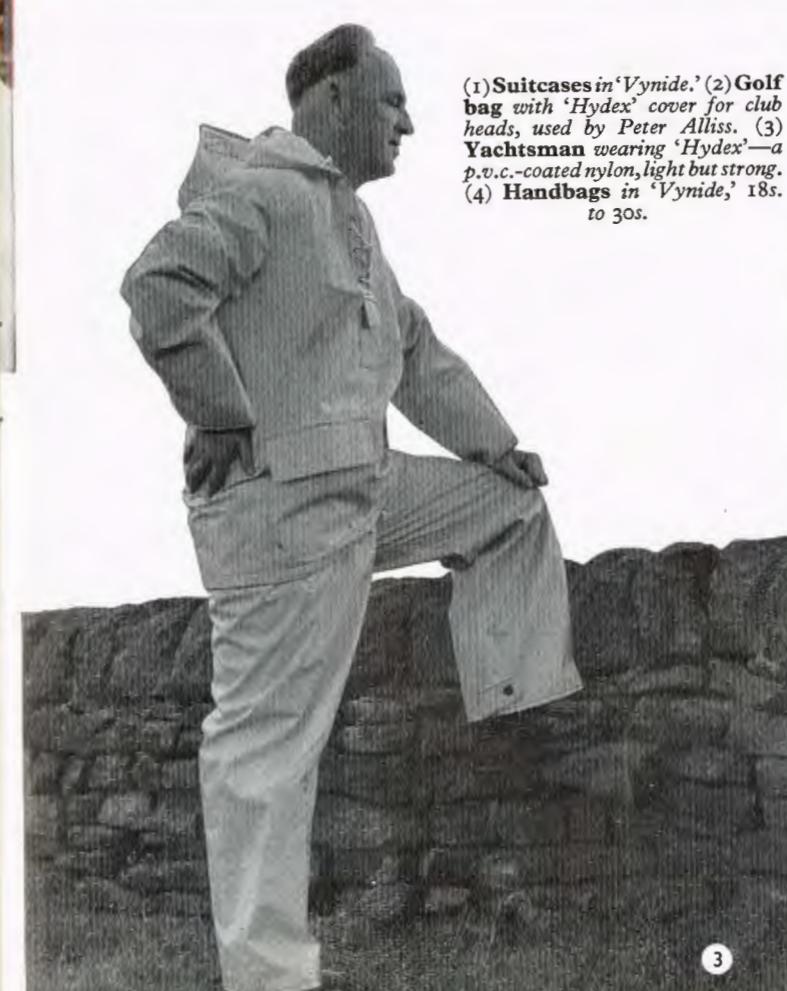
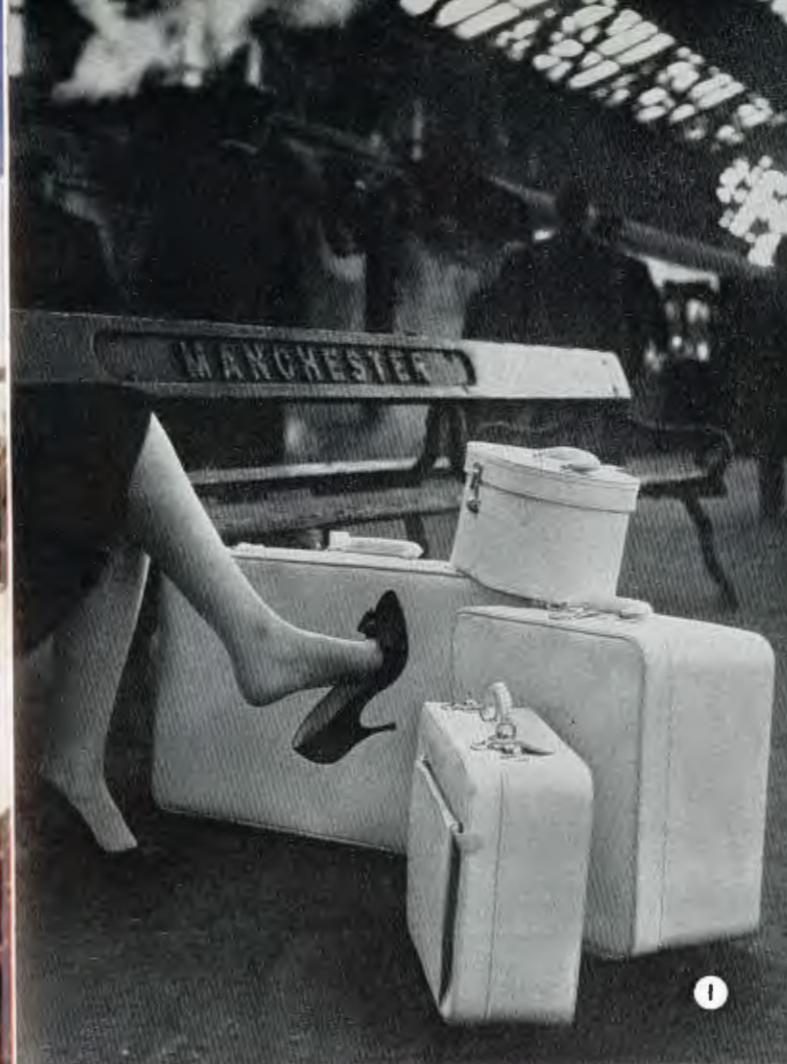
'Hydex' costs more than canvas but weighs only a third as much and lasts several times as long—showing a clear saving in labour and replacement expenditure. *One organisation estimates that it saves as much as £4000 a year by using large, zip-fastened containers made of 'Hydex' as re-usable envelopes for carrying mail between its various offices.* 'Hydex' is also used in place of tarpaulins to cover freight on trains and lorries, and for games-pitch covers.

I.C.I. (Hyde)'s present and future are very much dependent on half a century's accumulated experience of what you might call the art of coating things with other things. *But what may well prove to be very important business indeed springs from the Company's comparatively recently developed know-how in the field of 'Novon' p.v.c. foils—thin, unsupported sheets of p.v.c. that can be laminated to humdrum, traditional materials such as wood, wallboard or steel, giving them quite new qualities.*

#### A Revolutionary Material

'Novon' Ten is a p.v.c. foil specially devised for laminating to steel strip or sheet by a process developed by I.C.I. (Hyde) with Metalon Steels Ltd., British Rolling Mills Ltd., Wilmot Taylor Ltd., and the big steel firm of Richard Thomas and Baldwins Ltd. Steel sheet covered with 'Novon' does not need painting to resist corrosion and at the same time has the good appearance of p.v.c. Moreover it can be cut or formed by all the conventional techniques without the p.v.c. being damaged. *The possibilities for this revolutionary new material are almost limitless, and one can expect that when the necessarily lengthy development period has been completed there will be a very lively market both for the I.C.I. p.v.c./steel laminate*

(Continued on page 273)



(1) Suitcases in 'Vynide.' (2) Golf bag with 'Hydex' cover for club heads, used by Peter Alliss. (3) Yachtsman wearing 'Hydex'—a p.v.c.-coated nylon, light but strong. (4) Handbags in 'Vynide,' 18s. to 30s.

*One Man and his Job*

# THE BRAND-CUTTER

Interviewed by Denzil Batchelor

ALL round him the skyscraping machines grind on: the Frankenstein monster of industry fulfils its inflexible purpose. He sits alone in his little office, away from it all. If he were a philosopher he might reflect that of the personnel at Wallerscote Works there are 1029 cogs—big cogs and little cogs—and himself, the lone craftsman, the rugged individualist. For not one jute sack or paper bag goes out of the Works but bears his handiwork: the stamp of the brands he cuts out between 7.30 a.m. and 4.45 p.m., five days a week.

Leonard Arthur Ridyard is 42. He has been a brand-cutter for 18 years, and he is the only full-time man on the job at Wallerscote. There is one stand-in who takes over when he is on holiday or ill.

Len Ridyard began his working life as a labourer at the Works, went away to serve as a Royal Engineer, and then had his leg broken in three places in a black-out accident when acting as a despatch rider. ("I was looking for a corporal, and the corp was looking for me," he explains, adding sardonically: "He found me first—in the ambulance!")

On his discharge he came back to Wallerscote to be trained for his new job. He had five months' training in a bag factory, and then set to work.

A member of the National Union of General and Municipal Workers, he draws his brands on canvas-backed rubber  $\frac{5}{16}$  in. thick. The brands themselves are fascinating—they may be a word or a short string of words in Chinese or Arabic, in any of a score of languages of which Len doesn't understand a word: there are three thousand different shipping marks alone. He traces the letters, then reverses the tracing paper, and gets to work on his rubber with his tiny kit of tools: knife, scriber (steel pencil), pliers, dividers, rules.

With his knife—its blade made out of an old hacksaw blade and sharpened by himself—he carves away until the rubber letters of the brand stand out above the canvas back. These are then put on to wooden staves, printed off on a rotary machine, and finally stamped on to jute or paper sacks and bags. Though he is working on all those languages of which he doesn't understand a word, he hasn't made a mistake in his eighteen years on the job.

I saw him at work and was struck by the sureness and neatness of his touch, and the way in which he never cut

over the line, though he has had no experience as a draughtsman, having done no drawing since he left night school at 19. Waiting for his attention was an Arabic scroll which by my count had four dozen characters. From beginning to end that job will take between one and a half and two hours. For ordinary work he is allowed a little less than two minutes per letter, in which time he must draw, cut and "skin" his work: that is, clean up the job, clearing out the rubber chips down to the canvas back. You would be hard put to it to invent a machine that could cope with such variety of work in such a brief space of time.

Has he ever cut himself with that tiny dagger of a knife? Twice—once when somebody dropped an iron ring behind his back. He works in a flat cloth cap, which is somehow symbolic of the independent spirit of the chap. After I had watched him working like a master craftsman with his little knife I was surprised to learn that he was graded as a semi-skilled worker. "By my standards that's skilled work with a vengeance," was the comment of the official who introduced me to Len Ridyard. He reckons he's cut upwards of ten thousand brands in his time: some straightforward, some really complicated. "Like the one of a Scotsman in a kilt," he remembers. "There were seven different colours in that one. That was quite a job, that was."

When he is away from the Works Len does a bit of woodwork in the home, knocking up firescreens or shelves, still using his hands and a craftsman's tools, watching television ("good plays are my favourites"), gardening, or messing about with cars or motor cycles. He used to follow Northwich Victoria Football Club, but he doesn't think much of them nowadays. He has one daughter, who will be nine in July: she wants to be a nurse when she grows up.

"Hospital or children's?"

"She hasn't said. Anyway, there's plenty of time to change her mind."

"If you had a boy, would you teach him your job?"

"I'd let him choose for himself."

"And if you won £100,000 in a football pool?"

"I'd carry on working," he says. And he does. Back he turns to cut brands that will ensure that the sacks go to America or China, Madagascar or Aden.



Len Ridyard

# *NEWS IN PICTURES*

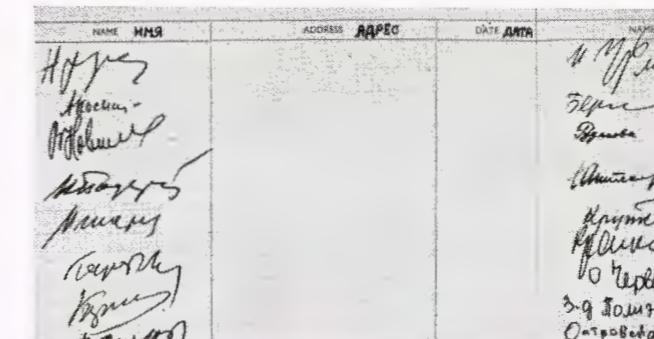
## *Home and Overseas*



**The Duke of Edinburgh** watches artificial respiration demonstrated by Miss Elizabeth Stewart and Miss Jeanette McMillan of Nobel Division. The occasion was a demonstration by successful competitors in the Duke of Edinburgh's Award Scheme, held on the Carrick Hills overlooking the Firth of Clyde last month. Altogether six members of Nobel Division received awards from the Duke at the presentations held later at Ayr Town Hall



**Belgians at Billingham.** Mr. John Metcalf (Billingham Division) won the 400 metres hurdles event when a Great Britain B team met Belgium in the North East's first international athletics match held at the Billingham Division Synthonia Club Stadium last month. His time of 52.1 sec., one-tenth of a second inside the Olympic qualifying standard, could win him a place in the British Olympics team. The British won the match convincingly against the Belgians by 128 points to 84.



**Top** of the column on a page from the visitors' book on the I.C.I. Plastics Exhibition held in Moscow recently is Mr. Khruschev's signature



**Wendy Lewis**, who made headlines when she walked from John o' Groats to Land's End earlier this year, was a surprise visitor at an Alkali Division pensioners' party at Buxton recently. She stayed for tea, and here she chats with Mr. E. Hoyle and Mr. G. Walker



'Terylene' blends of cotton and wool worsted have been chosen for members of the British Olympics Team. The girl's formal dress is by Frederick Starke and the men's blue blazer and white trousers are by Daks, with a shirt by Marks and Spencer. Incidentally, the Australian Olympics team has also chosen 'Terylene' for all its uniforms



**Open Day.** It seems a far cry from these tiny chips that Dad makes to the glamorous wedding gown pictured on the right. The answer is that they are both nylon. Our pictures were taken at the recent Open Day at Nylon Works, Wilton—the first to be held since it started up in 1957—attended by 800 employees and their families



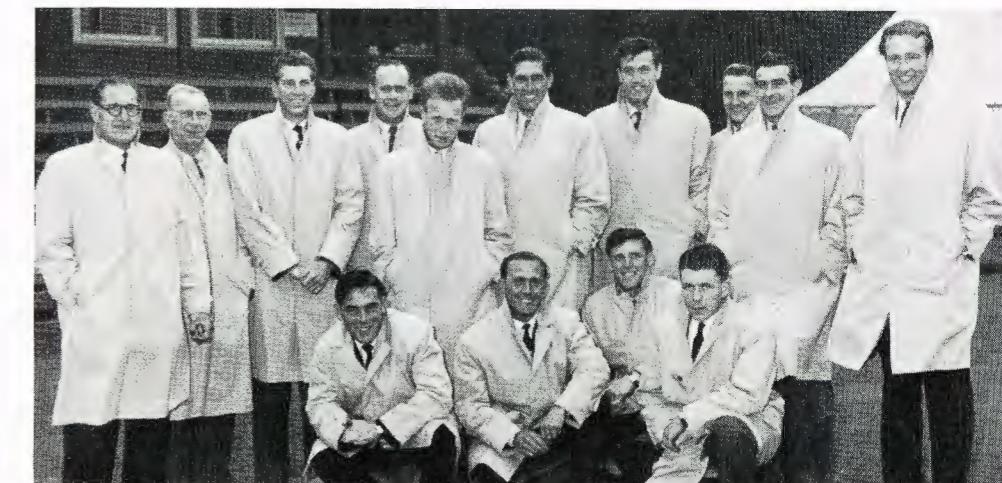
Twenty-one years ago this *Magazine* cover was intended as a light-hearted indication of the Editor's summer holiday. In fact the *Magazine* did not reappear until after the war in 1947



**Sculpture in 'Perspex.'** Arthur Fleischmann, whose sculpture has achieved wide recognition, recently carved in 'Perspex' the screen and altar panels at St. Peter's Church, Hinckley, Leicestershire. 'Perspex' is made at I.C.I.'s Wilton Works



**Earl Mountbatten**, accompanied by Mr. H. McFadzean, President of the Federation of British Industries (centre), is greeted by Mr. H. A. Rigby, a member of I.C.I. New York's technical team, when he visited the I.C.I. stand at the British Exhibition opened in New York on 10th June by the Duke of Edinburgh



**Raincoats** must be a sore subject for any cricket team, but Yorkshire, cricket's champion county, look cheerful enough here in their new Dakota 'Terylene'/cotton coats. 'Terylene,' of course, is made at Wilton Works in North Yorkshire



This £1500 telescope has been loaned to Mr. J. Glasby (Nobel Division) by the British Astronomical Society. As we reported last month, it is one of the biggest in Scotland outside Edinburgh and Glasgow observatories



**First prize** in the Scottish Aeromodellers Association championships went to an aircraft built by Nobel Division apprentice Alex Hill (centre). He and apprentice Archie McAlpine (left) were members of the winning team flying the plane



**On the way** to the British Exhibition in New York, Mr. Galvin Wright, I.C.I. Publicity Controller (left), who was responsible for the I.C.I. stand there, met members of the C-I-L Advertising and Public Relations Departments in Montreal. Here he chats with (l.-r.) Mr. Ted Abrams, Mrs. Betty Lynn and Mr. A. F. M. Biggs



**Modern bobsleigh.** This seasonal picture from the Australian Alps shows a novel use for 'Visqueen.' Two yards at two bob a nob, wrapped round stern first, proved a first-class substitute for a conventional toboggan. 'Visqueen' polythene film is made by both I.C.I. and I.C.I.A.N.Z.



**Diamond weddings** were celebrated in June by two I.C.I. pensioners. Top: Mr. Henry Kemp, formerly of Bellingham Division, is seen with his wife and great-granddaughter and the Mayor of Stockton. Right: Mr. A. R. Berry, who retired from Head Office in 1932, was photographed with his wife and daughter



**Angling champions.** Mr. Matt Tudhope of Nobel Division and his son, Matt junior, pulled off a double in the Ayrshire Angling Championship recently. At the weighing-in Matt senior was a full 8 oz. ahead of his nearest rival, while Matt junior won the under-18s title



**The new Rolls-Royce Phantom V** delivered recently to the Queen incorporates I.C.I. 'Perspex' in the side panels and rear section of the roof to give additional visibility for ceremonial occasions

# August IN THE GARDEN

## HINTS ON SHOWING

By PERCY THROWER

**A**UGUST being the month of the summer flower shows, there will be shows large and small in all parts of the country—for many horticultural and garden societies the highlight of the year. The larger flower shows include the City of Leicester Show, the Shrewsbury Flower Show, Southport and the City of Birmingham Shows. Many gardeners welcome the opportunity of proudly showing their achievements, and quite rightly so: it is the result of hard and patient work. Others are hesitant and prefer not to exhibit their fruit, flowers or vegetables. It is, I consider, up to the members of societies to support their shows, not only by entering some exhibits, but also by going along to the show. We can all learn a lot from even the smallest of flower shows.

**T**here is an art in exhibiting, as there is in growing fruit, flowers or vegetables to perfection. Exhibiting is a fine experience. Judging at many shows up and down the country gives me the opportunity to see where so many exhibitors go wrong: there is many an exhibit ruined by poor exhibiting which with a little thought and care could win a first, second or third prize.

The first essential is to read the schedule carefully. If it asks for five onions, twelve pods of peas, six tomatoes, five roses, or nine spikes of sweet peas, be sure to have that

number, no more or no less, or on your exhibition card you will find the judge has written "Not according to schedule."

Never remove the golden brown skin from the onion bulbs; you will lose points, so will you if that natural bloom is rubbed off the pods of peas. Never attempt to polish peas; in fact they should never be touched with the fingers—always cut them from the plants and handle them by the stalks. Wash potatoes carefully and do not remove the skin, even though there may be one or two patches of common scab. Be sure that the runner beans are young and tender, the hearts of the cabbage and lettuce solid, and the curds of the cauliflowers white. Under no circumstances should you polish a tomato or cucumber, because here again you will be taking away the natural waxy bloom, and what could be a prizewinning exhibit will be passed by.

**A**pples, pears, plums, grapes and other fruits have their beauty and finish in the waxy bloom: never handle or polish them. Gather raspberries with their stalk and exhibit them in this way. Flowers must be fresh. Cut them the day before the show—gladioli three days before—place them in deep water in a cool place, and no matter how hot the day may be they will not look tired and distressed.

Good luck to you in your show; but bear in mind most shows are organised and staged by a few hard-working and willing members of your society: they are worthy of all the support you can give them.

**T**his month in the garden prune the black currants now that fruiting is finished, but on as many of those branches which have borne the fruit as possible, cutting them back to a strong shoot. It is the young shoots which are growing now that will produce next year's fruit; prune now and they will be so much stronger. Prune the raspberries too, cutting down to ground level all the old canes which have fruited. Thin out the young canes so that each one can enjoy its full share of light and air. With a good general fertilizer feed both the black currants and the raspberries.

Prepare for planting strawberries. Dig in some manure, garden compost or peat, and sprinkle over the surface some fertilizer: the plants will be there for up to three years. Sow the seeds of spring cabbage and autumn-sown onions. Cut all the dead flowers from the roses, and in particular the annuals—they will flower for so much longer. Should you be going away on holiday, make an arrangement with a friend or neighbour to water the pot plants and the hanging baskets in exchange for the runner and French beans which would otherwise spoil.

# People and events . . .

## Mr. C. R. Prichard Retires

MANY people in I.C.I. will have heard with sadness that ill health has caused Mr. C. R. Prichard, Director in charge of the Company's Heavy Chemicals Group, to retire at the comparatively early age of 57.

*The Chairman writes:*

I was very sorry when I learnt that ill health was compelling Mr. Prichard to offer his resignation. His critical faculties, enquiring mind and wide intellectual interests are among the many qualities which enabled him to do much excellent work for the Company, and he would undoubtedly have continued giving devoted service had his health allowed.

Charles Prichard left Winchester for Trinity College, Oxford, in 1921, and after gaining a First in Chemistry he visited North America with a travelling scholarship. On his return in January 1926 he joined the research department at Winnington and a year later became a plant manager at Lostock Works. He later served in the technocommercial department, where he was

closely concerned with the proposals to erect the Osborne alkali works in Australia, which he visited in 1932. His keen interest in flying led to his call-up in 1939 for service with Fighter Command, in which he was a wing commander, but in 1943 he was released at the Company's request and joined the Board of the Alkali Division (as it now is); two years later he was appointed a managing director.

He left the Division in 1950 to become chairman of the Salt Division, and in 1952 he joined the Main Board, shortly to take over the Development function from Mr. Lutyens, who retired in 1953. After two years Mr. Prichard was appointed one of the two Overseas Directors, and in this capacity he rendered specially valuable service to I.C.I. (India) Ltd. At the time this Company was undergoing a transition from what was first and foremost a merchanting organisation to a subsidiary with an increasingly important stake in manufacture. Such a transition necessitated the strengthening of the scientific and technical side, and to this end a technical department had to be built up.

Mr. Prichard not only bore responsibility for these developments but he also interested himself very closely in personnel matters. He paid careful attention to the living conditions of the expatriate staff in India and saw to it that the levels of local taxation did not prevent them from receiving adequate remuneration. All this involved him in a great deal of hard work and constant



Mr. C. R. Prichard

travelling, which have undoubtedly contributed to the overstrain that has led to his premature retirement.

All his colleagues on the Board are deeply sorry to have lost his services in this way, but it is of some consolation to know that his health is likely to be improved by laying aside his directorial responsibilities. We earnestly hope that this will prove to be the case, and he leaves I.C.I. with the good wishes and the thanks of us all.

## Polythene for Argentina

LAST month, coinciding nicely with President Frondizi's plea for more British investment in Argentina, I.C.I. announced its plans to spend £5 $\frac{1}{2}$  million on a new polythene plant there. The plant, which will be operated by Duperil Argentina, our Argentine subsidiary, is to be sited at San Lorenzo, 200 miles north of Buenos Aires, where Duperil already have under construction plants for sulphuric acid and a number of other chemicals—a project expected to cost just under £2 $\frac{1}{2}$  million.

The new polythene plant will have an initial capacity of 10,000 tons a year and will operate the I.C.I. high-pressure polymerisation process. This is now in use in nine countries throughout the world, including India, Australia and Canada, where I.C.I. subsidiaries operate large polythene plants, and plans are already well advanced for the 15,000-ton plant announced in April which I.C.I. is building in Denmark in collaboration with the Møller organisation.

## Nuclear Safety Committee

TWO I.C.I. names are among the two dozen men appointed to the Nuclear Safety Advisory Committee

set up by the Minister of Power, Mr. Richard Wood. They are Sir Alexander Fleck, former chairman of I.C.I., who is chairman of the new committee, and Mr. R. E. Newell, managing director of Wilton Works.

Sir Alexander Fleck is currently chairman of the Minister of Power's Advisory Council on Research and

Ilfacolor has wide exposure latitude; that is, any reasonable variation on either side of the correct exposure still gives printable negatives, and it can be used successfully in all lighting conditions—in daylight, indoors with clear flash-bulbs or electronic flash and under photoflood light—no camera filters being required.



Sir Alexander Fleck  
Mr. Newell

Development and was chairman of the three committees charged with the investigation of matters arising from the accident at the Windscale establishment of the U.K. Atomic Energy Authority. Mr. Newell was loaned during the last war to the Canadian Government and was in charge of the engineering division of the Canadian Atomic Project, which was responsible for building the first atomic reactor outside the United States at Chalk River, Ontario. More recently, in 1958, he was appointed by the World Bank as one of the two British members of an international panel which went to Italy to advise on the establishment of a nuclear power station in southern Italy.

## New Colour Film

ILFACOLOR, the practical result of the colour film link-up between I.C.I. and Ilford Ltd., Britain's largest photographic equipment makers, is now on sale in the shops. For those of our readers with short memories, I.C.I. joined forces with Ilford eighteen months ago over the commercial development of colour film based on the I.C.I. negative-positive colour process (developed by Dyestuffs Division). Ilfacolor is the direct result of this collaboration.

It is available in the 120 and 620 sizes and has a speed of 32 ASA. It costs 10s. 6d., and processing is carried out by Ilford at 6s. 6d. a roll, with prints costing 2s. 9d. each.

## Division's "Thank You"

FROM the glowing reports that appeared in the national press, it looks as if Dyestuffs Division may have played a big part in launching Mr. Maurice Handford on the road to success as an orchestral conductor. The concert which called forth the critics' praise was a special one presented by the Division in association with the Hallé Concerts Society at the Free Trade Hall, Manchester. Thirty-two-year-old Mr. Handford, the orchestra's principal horn player, was the conductor for the night.



It was Dyestuffs Division's way of saying thank you for the great encouragement and active support given by individual members of the Hallé to the Division's own orchestra and choral society, and in particular to Mr. Handford as their conductor. Paying tribute to Mr. Handford's work in a foreword to the programme, Dr. J. Avery, Dyestuffs Division chairman, wrote: "He has been instrumental in raising and maintaining great enthusiasm among the members of our orchestra by his unfailing hard work and inspiration when coaching them . . . We offer him our best wishes, not only for this occasion but for his future career as a conductor."

The programme, played to a full house, was impressive: the overture to "Der Freischütz" by Weber, Mozart's "Eine kleine Nachtmusik," the ballet suite "Swan Lake" by Tchaikovsky, and the "Symphonie Fantastique" of Berlioz. The *Daily Express* commented: "Tonight he (Handford) goes back to his old desk as a horn player. It would be folly to leave him there too long." The *Daily Telegraph*, more restrained but equally enthusiastic, said: "Mr. Handford can clearly take encouragement from his achievement."

## New Headquarters

ANOTHER division is planning a big move. General Chemicals Division, like Nobel Division, is to move its headquarters nearer the centre of gravity of its manufacturing activities, in this case Runcorn.

To house all the Cunard Building staff in Runcorn more office accommodation will be required, and it is proposed to extend the new Runcorn Heath Offices, which currently house the engineering, power and a number of other similar departments for this purpose. The transfer to Runcorn therefore cannot be immediate and will probably take place in about 2½ years' time.

## 'Dulux' Portraits

Keith Jackson, a 20-year-old apprentice fitter-turner at Wallerscote Works, won the Alkali Division Lawson Memorial Competition with his first attempt at painting—and he used 'Dulux' household paint to do it. In addition to the main award, his painting was voted the best under-21 exhibit and the best painting or photograph in the show.

Keith had previously worked in pencil and crayon only. When he decided to paint a full length portrait of film actress Martha Hyer from a small photograph, he found artists' oil colours were too expensive, so he hit on the idea of using 'Dulux' household paint.

He prepared his hardboard surface with 'Dulux' white undercoat, and using more undercoat as a base, mixed in his 'Dulux' gloss colours.

He used only six small tins of gloss

## PEOPLE

**Dr. J. H. Shipley**, vice-president of C.I.L., has been appointed a member of Canada's National Research Council.

An apprentice plumber at Dyestuffs Division's Grangemouth Works, **Mr. John Cocker**, is the new East of Scotland judo champion. He started judo four years ago and was upgraded to black belt last year after defeating eight other brown belts in contest.

When Scouts of the Glasgow and Edinburgh handicapped troops travel to France later this month to hold a two-week-camp near Chantilly, 30 miles north of Paris, Ardeer engineering apprentice **Ian Fraser** of the Largs Rover Crew and Queen's Scout Donald McInnes, son of **Mr. Ian McInnes** of Ardeer Detonator Department, will be in the accompanying party.

**Dr. F. L. Clark** (African Explosives and Chemical Industries Ltd.) has been appointed honorary professor of physical chemistry at the University of Pretoria. Dr. Clark is at present manager of the A.E. & C.I. research department, and his appointment as development manager on the retirement in a few months' time of Mr. C. W. Brisley was announced recently.

We announce with regret that **Major R. O. Squarey**, who at the time of his retirement in 1948 was the Company's Transport Controller, died on 6th June. He was 73.

A Wilton blood donor, **Mr. F. C. Brammar**, construction projects engineer, has received a silver medal for making 25 donations to the National Blood Transfusion Service.

**Mr. A. E. Thomas** (Metals Division) has just won his third prize in the Birmingham municipal gardens competition run by Birmingham Housing Management Department. They divide their estates into areas of 500 houses and inspect all the front gardens in each area. Mr. Thomas was first again this year in his area. He now has two firsts and a second to his credit.

**Mr. John Bone** (Nobel Division) was recently appointed a Class I timekeeper by the Scottish Amateur Athletics Association. This means that he can be called on to keep time during international events, and if records are involved his presence with some other 1st class timekeepers would mean recognition of the record by governing athletic bodies.

Two I.C.I. employees have had the honour of being invited to one of this year's royal garden parties at Buckingham Palace. They are **Mr. Tommy Andrews** (Billingham), former mayor of West Hartlepool, and **Mr. J. A. Burns** (Wilton), chairman of Saltburn and Marske Urban Council.

and obtained further colours by mixing. Flesh tones proved the biggest problem, but after some experimenting he managed to achieve an extremely life-like effect. The deep hues of the



drapes that appeared in the painting were the result of building up layer upon layer until the required density was reached.

Keith has now embarked on a full length portrait of Mitzi Gaynor from a small magazine photograph. Once again he is using 'Dulux.'

## Buying I.C.I. Stock Abroad

SEVERAL national newspapers recently carried reports that trading in I.C.I. stock is shortly to begin on the Paris Bourse (unofficial market). How does this affect I.C.I.? **Mr. A. G. Woods**, I.C.I. assistant secretary, first points out that this is not such a new departure as the newspaper reports perhaps suggest. France is only the latest of a number of countries to show an interest in unofficial trading in I.C.I. stock. Americans, Canadians and Belgians have all been able to deal in I.C.I. stock on their own stock exchange for some years. More recently Switzerland and Western Germany have made similar arrangements.

Notice the word "unofficial." To have I.C.I. stock officially quoted on say the Paris Bourse or on Wall Street would mean satisfying the rules of each particular stock exchange and the appropriate national laws, which would impose a heavy burden on the Company, and indeed the various regulations might well conflict.

Two I.C.I. employees have had the honour of being invited to one of this year's royal garden parties at Buckingham Palace. They are **Mr. Tommy Andrews** (Billingham), former mayor of West Hartlepool, and **Mr. J. A. Burns** (Wilton), chairman of Saltburn and Marske Urban Council.

However, where overseas people are anxious to trade in I.C.I. stock, the

system adopted is for a foreign bank or finance house to buy a block of I.C.I. stock (which for convenience is normally registered in the name of a British bank as its nominee) and then to make available on the foreign stock exchange concerned its own certificates representative of units of I.C.I. stock. These certificates, or depositary receipts as they are sometimes called, are then bought and sold on the unofficial market of the foreign stock exchange, but as far as the I.C.I. stock is concerned it remains registered in the name of the nominee of the foreign bank, to whom I.C.I. pays the dividend.

It is then the job of the foreign bank to divide the dividend among the holders of its own certificates according to the amount of I.C.I. stock represented. This system causes no trouble to the Company, because we are unaffected by dealings made in this way in our stock, and at the same time is a



great convenience to the foreign stockholder, who is saved the exchange and other difficulties which he would have to face had he bought I.C.I. stock direct and appeared as a registered holder on the I.C.I. Stock Register.

## A Book for Cricketers

BIOGRAPHY of the famous Yorkshire and England cricketer, Wilfred Rhodes, was published last month (*Hollis and Carter*, 18s.). Its author is **Mr. Sidney Rogerson**, former I.C.I. Publicity Controller.

**Mr. L. H. F. Sanderson**, Overseas Recruitment Officer for A.E. & C.I. and a member of the M.C.C., writes:

This altogether admirable, and at times moving, picture of one of cricket's greatest figures brings home to the reader not only how he was "a bowler by divine inspiration" but also that he became the great batsman he was "by taking pains" and by sheer application; curiously enough, this was one of the causes of the denigration which frequently and undeservedly dogged his career.

Mr. Rogerson gives a very readable account of Rhodes' astounding achievements on the cricket field, but perhaps one is most impressed by the understanding and frank picture of a man lacking in the outwardly likeable qualities ("taciturn and even gruff") who through courage, loyalty, singleness of purpose and true modesty made such a contribution to his county and his country. His "There's no such thing as soon in cricket" might well have destroyed a lesser man.

It is fitting that the book should begin with a tribute from such a distinguished member of our friend the enemy as Sir Donald Bradman; it is a book difficult to write but easy to read, and Mr. Rogerson has done a service in recording objectively the unique achievement of one who has had something less than his due share of recognition. A book not to be missed by any cricketer, whatever his vintage.

## APPOINTMENTS

Some recent appointments in I.C.I. are: Head Office: Mr. M. G. Davis and Mr. A. B. Patrick, Assistant Treasurers (in addition to Mr. W. Reid and Mr. C. M. Jennings); Dr. K. W. Gee, Deputy Head of Central Work Study Department.

## DR. CARESS JOINS THE BOARD



As we go to press we learn of the appointment to the I.C.I. Board of Dr. A. Caress, chairman of Fibres Division since its formation. Dr. Caress joined I.C.I. in 1928 as a physicist at Billingham, and in 1937 was appointed research manager of Plastics Division. Eleven years later he became joint managing director of Plastics Division and in

**African Explosives and Chemical Industries Ltd.**: Dr. J. F. Preston, Research Manager. **Billingham Division**: Mr. E. J. Challis, Oil Works Manager. **Fibres Division**: Dr. E. B. Abbott, a Managing Director (jointly with Dr. F. J. Siddle); Mr. G. F. Whitby, Chairman. **I.C.I. (Export)**: Mr. P. T. Allen, local director of branches in Ghana and Nigeria. **I.C.I. (India) Private Ltd.**: Mr. J. Dick and Mr. M. G. Satow, Directors. **I.C.I. (Sudan)**: Mr. T. D. Adams, Managing

Director. **Imperial Aluminium Co. Ltd.**: Mr. J. C. Morris, Personnel Manager.

## 50 YEARS' SERVICE

The following employees have completed 50 years' service with the Company: **Alkali Division**: Mr. G. Thornton, Fleetwood Works (15th July). **Billingham Division**: Mr. E. Murray (7th June). **General Chemicals Division**: Mr. W. Noden, Castner-Kellner Works (29th June).

## NEW HORIZONS FOR PLASTIC COATINGS (continued from page 260)

and for the rival product developed by BX Plastics and the steel firm of John Summers.

'Vynalast' is a paper-backed foil that does for wood what 'Novon' Ten does for steel—decorates and protects, transforming it into what is virtually a new material. Laminated to hardboard, it bids fair to satisfy a booming demand for panelling that will stand up to rough treatment.

'Vulkide' and 'Novon' 504 are two new products that are establishing themselves in many applications—from car arm-rests to radio cabinets—thanks to the new techniques of vacuum forming and covering. In the vacuum forming process, sheet or foil plastic material is clamped over a mould; intimate contact between the sheet and the mould is then obtained by heating and so softening the sheet and then evacuating the entrapped air.

*Something like half of I.C.I. (Hyde)'s output goes abroad,*

*either as direct exports or in goods exported by customers.* Competition in all the direct export markets is extremely keen, and business can only be maintained by excellent quality both in product and design. The many users in Europe, New Zealand, Africa and other markets all over the world are evidence that the new materials offered today by I.C.I. (Hyde) are living up well to the tradition created by their predecessor 'Rexine.'

What of the future? New standards of comfort and appearance, new techniques of manufacture and application are being studied all the time at Hyde; and a big research and development effort is being made. In whichever direction new plastics move, I.C.I. (Hyde)'s products will find an increasing place in everyday life as living standards rise, and the Company are determined to remain the leaders in their field.

## SOME ANGLO-AMERICAN TRADE PROBLEMS

By S. P. Chambers, Chairman of I.C.I.

In a recent address to the English Speaking Union, Mr. S. P. Chambers surveyed the field of competition in exports between Britain and the United States and in particular three problems: exports at below full cost of production; the Common Market and Free Trade Areas; and exports to the Communist Bloc.

**I**N the conditions that we are likely to see in the 1960s (said Mr. Chambers in the course of his address) there is bound to be a drive by American manufacturers to expand their exports. This may well hurt British industry in those markets, particularly in the sterling area, which have been regarded traditionally as markets for British goods. *Nevertheless, nobody can complain at fair competition, from whatever sources the competition comes. The question which does arise is whether the competition will be fair. This is a difficult matter to explain in such a way that there is not considerable misinterpretation.*

If every manufacturer, whether in Britain, U.S.A. or elsewhere, sold goods overseas at the same prices that he sold them in the home market, and if these prices were such that he made a reasonable if modest profit on his sales, then we could say that everybody was playing the game according to the rules. This does not happen in practice.

In practice many manufacturers, both in Britain and in the United States, aim to sell most of their output in the home market at a profit and sell overseas what they cannot sell at home. There are, of course, exceptions. The marginal quantities they sell overseas are frequently sold at prices below home prices but above the marginal cost of production, that is to say, below the actual cash outlay which this production requires but ignoring any proportion of overheads, depreciation and other charges which must be taken into account when determining the profit of production as a whole. It will pay a manufacturer to keep his plant working at 100% capacity even if the last 15% is used to make products going overseas at just over the marginal cost of production rather than having plant working at 85% capacity for the home market only.

### Significance of High Overheads

In those industries where direct costs are low and overheads very high—and this means in general the highly capitalised industries—the difference between the full price obtained in the home market and the marginal price obtained overseas can be very great indeed. This is particularly true where, as in the chemical industry, many products are made jointly, and it is far better to sell some of the by-products at almost any price obtainable in a foreign market rather than throw them away.

Exports represent a much greater proportion of the output of British industry than it does of American industry, and there are many firms in Britain which are

compelled to sell overseas at a full price if they are to make a reasonable profit on capital. *In America, however, where the internal market is so large and so rich, a relatively small proportion of output has to be sold overseas, and it is much easier to bring down export prices to marginal levels.*

This means, therefore, there is likely to be much greater pressure from American companies than from British companies to depress prices in third markets, e.g. South Africa, below the point at which production could be sustained profitably for this market by itself. Already this is happening, and there is likely to be some resentment from those firms in Britain which, although they have costs no higher than those of American companies, see their profits whittled away because of American competition based on marginal cost.

### Too Much to Expect

If we were dealing only with American imports into Britain or British imports into America, anti-dumping laws or price discrimination laws could be invoked wherever a manufacturer is exporting at a price below his home price; but we are dealing with exports into their countries, and we cannot expect such countries to go into the question of unfair competition as between manufacturers in different countries sending goods into their territories.

The only way in which this problem of competition at prices below full cost but just above marginal cost could be tackled would be by some agreement between manufacturers in different countries to play fair on exports. Any such agreement would be regarded in America as a heresy, a conspiracy, or even a crime.

Manufacturers in Britain and in Continental Europe have understood this problem and have attempted to cope with it for generations, but the worship of competition in all its forms in the United States is such that it may be a long time before some understandings are reached in this very difficult field. International cartels are anathema: they are regarded as the creation of the Devil and of wicked industrial conspirators, particularly those living in Western Europe. The fact that something very much like a cartel may be necessary to secure fair competition, however fierce, is not likely to be recognised in the United States for quite a long time, as too much of the thinking there in Government circles is based on economic theories which bear no relationship to the hard facts of international trade. However, just as the common sense of

manufacturers in the United States leads to practices there far different from the lip-service paid to free competition, fair and unfair, so we may hope that the common sense of the same manufacturers will lead to fairer practices in the pricing of goods exported from the United States.

There are at least two other sets of problems in which there may be a divergence of view between British and American policy.

There has been much talk lately about the setting up of the European Economic Community (the Inner Six) and the European Free Trade Area (the Outer Seven). In Britain there has been a vague feeling that, while the United States has encouraged the setting up of the European Economic Community, it has looked less favourably upon the setting up of the European Free Trade Area. Britain is a member of the latter but not the former, and this apparent differentiation by the United States against the Outer Seven appears to be unfriendly.

The matter is not simple; but if the substantial difference between the European Economic Community and the European Free Trade Area is recognised, I think there is bound to be more understanding for the American doubts about the European Free Trade Area.

Although we have come to look upon the European Economic Community as a kind of customs union and to think of it in economic terms, in reality there is within the six countries concerned (France, Germany, Italy, Holland, Belgium and Luxemburg) a good deal of drive towards political integration. The peoples in these countries are determined that they will not again go to war against each other and they are determined to level up their standards of living. The measures envisaged go far beyond a customs union. Complete freedom for the movement of both labour and capital, the adoption of consistent monetary policies, and the levelling up of social welfare legislation, all point to ultimate political integration.

### Ties with Commonwealth

*Whether political integration is achieved or not—and there are many serious obstacles—it is clear that countries such as Britain with its different political tradition and with its economic and other ties with the Commonwealth could not contemplate joining a group with these far-reaching political objectives.* The same is true, to some extent, of Switzerland and Sweden with their traditional neutralist policies.

It is natural that other countries would see great advantage, both political and economic, for the rest of the free world if the complete economic integration of the European Economic Community could be brought about. With a population roughly equal to that of the United States, the countries of the E.E.C. have in the past suffered from being split up into small units with some of the member countries having small, uneconomic industries. This has been one of the main differences between

these countries and the United States and accounts for much of the difference in industrial progress. If the future holds, as it may well do, the prospect of a fairly rapid rise in standards of living as industries in the E.E.C. become more efficiently and more rationally organised, *the rest of the free world will gain by having a much richer customer to deal with and more stable political conditions.* If, in the meantime, with the reduction of the tariffs inside the area and the raising of a common tariff against the rest of the world some exports from the United States suffer, this may be a small price to pay provided the objectives are achieved. In any event, the intention is not to have a high common tariff designed to protect the E.E.C. from all competition but to have a common tariff which it is hoped can be reduced over the years.

### A Different Kind of Animal

The European Free Trade Area is a different kind of animal altogether. It is little more than an association of most of the other countries of Western Europe (Britain, Norway, Sweden, Denmark, Switzerland, Austria and Portugal), who aim at reducing the tariffs between one another without having a common tariff barrier against the rest of the world. These seven countries can probably more usefully discuss tariff questions with the E.E.C. jointly than any one of them can separately. It is difficult to see how the existence of the European Free Trade Area can lead to the kind of economic integration that the E.E.C. is intended to do. The countries of the European Free Trade Area are not all geographically contiguous and have very great differences, both economic and political.

It is not unnatural, therefore, that our friends in America should look at the European Free Trade Area as a kind of scheme to give preference to exports from one another and to discriminate against exports from the United States. In particular, it might seem to be one way in which Britain can rescue something from what might be the wreck of some of its trade with Continental Europe and to do this at the expense of the United States. However, although this picture of the E.F.T.A. and of the objectives is a travesty, one is bound to have some sympathy for those of our American friends who can see much of their trade with Europe disappearing if they are barred by a relatively high tariff wall both from the E.E.C. and from the E.F.T.A. Whereas in the case of E.E.C. they can see long-term advantages flowing from economic integration, such advantages do not appear to be present in the case of the E.F.T.A.

The position would, of course, become a good deal worse if agreements between E.E.C. and E.F.T.A. led to virtually the whole of Western Europe, including Britain, becoming a kind of free trade area for European goods with only goods from America being left out in the cold beyond a tariff wall.

These matters are still under discussion. No one knows what the final shape of tariffs and economic arrangements in Europe will be, *but personally I feel that the suggestion which has been made that the North American continent should be included in any arrangements designed to reduce tariff barriers in Europe, so that there is no discrimination against goods from North America, deserves the most careful consideration.*

I say this because so much of the thinking in Europe up to two or three years ago was based on the hypothesis that there would be a continuing dollar shortage and that manufactured goods from the rest of the world could not hope to compete with those from the United States. As this is no longer true, I feel that the time has come when discrimination of any kind against American goods should go and a general policy leading to greater liberalisation on both sides of the Atlantic would be much to the advantage of the free world as a whole.

### Trade with Communist Countries

Finally, there is the question, which I have deliberately left out of account so far, of trade with Communist countries. Here again there are some differences between thinking in Britain and in the United States.

Apart from the sale of certain strategic materials, the policy in Britain has been to sell British goods of all kinds anywhere in the world provided that the customers can pay up. In addition, there has been no prohibition on the sale of know-how, processes or industrial machinery to countries behind the Iron Curtain.

In the United States the policy has been a good deal more restrictive. There has been a reluctance to sell goods to the Iron Curtain countries and point-blank refusals to sell know-how, processes and industrial machinery. I think I am right in saying that the Chemical Manufacturers' Association in the United States still prohibits its members from selling processes or plants to Communist countries and that the same prohibition applies to other sections of American industry. On the other hand, so far as I am aware, there is no American Government prohibition on the sale of goods, processes, know-how or industrial machinery other than goods of strategic importance.

As I see it, there are three arguments in the U.S.A. against developing trade with Iron Curtain countries.

The first is that we are building up an unfriendly competitor. The second is that we are assisting Communist countries in the fabrication of a powerful weapon for economic warfare against the free world. The third is that by selling processes, know-how and technically complicated machinery we are releasing Russian technical resources for the further development of nuclear warfare. Let me take each argument in succession.

The first argument has substance but is of almost equal relevance to the sale of processes and industrial machinery

to countries such as Japan, which, if they are built up to high technical standards, have an enormous advantage in export markets because of their low wage costs. I feel that the long-term advantages of seeing rising standards of living, whether in Japan or in countries such as Poland or Russia, outweigh the short term embarrassment, however acute, of competition from low cost goods from these countries if they are sold processes and industrial machinery by countries such as Britain or the United States.

So far as the chemical industry is concerned, I.C.I. has been engaged in selling processes to Iron Curtain countries, but we are satisfied that the internal demand in those countries for the consumer goods which will in due course be produced there is so great that we need not fear competition in export markets for a long time to come.

On the second point I doubt whether in assisting the countries of the Communist bloc to build up their industrial machine we are doing much to strengthen their power to wage an economic cold war by flooding the free world with goods at very low prices. After all, the free world has the weapon of prohibition of imports from these countries if it felt that the trade had a dangerous political slant and was intended to do economic damage. Secondly, it has to be remembered that trade is a two-way business, and if it is balanced we shall be getting from Communist countries goods of equal value in total to what we are selling to Communist countries. At the moment there is certainly no conclusive evidence that exports from Communist countries are designed to cause economic damage in the free world.

### Theory v. Realism

As to the last argument, that we are releasing Russian technical resources for further development of nuclear warfare, here I think the argument is rather theoretical and in practice has no validity. After all, in Russia the control of the economy is such that if the Government there wishes to have a greater technical effort put into the development of nuclear warfare they will do this and can do it at the expense of the rest of the economy; the extent to which they can be assisted or diverted from such a purpose by increasing or decreasing technical assistance in other industry seems to me to be negligible.

My personal view—and I believe it to be shared not only by a good many people in Britain but also by friends in the United States—is that the more we trade with Communist countries and the more we exchange visits for ordinary commercial or industrial purposes as distinct from mere sightseeing, the better we shall understand each other and the more chance there is of reducing international tension. I feel that for the free world the balance of advantage lies overwhelmingly in greater trade with the Communist countries, and my hope is that a similar belief will spread among our American friends.

## MY IMPRESSIONS OF MOSCOW

By Margaret Farrell

Last month Margaret Farrell wrote about I.C.I.'s plastics exhibition there. This month she tells what it is like to meet the people of Moscow.

EVERYONE talks about the streets of Moscow, wide and dignified—about the Kremlin with its rose-coloured walls, sombre and beautiful—and St. Basil's, a maze of twisted shapes and strange colours. It's all true. But there are other things. The lilacs, purple and white, which bloom everywhere, the lilies of the valley which everyone in Moscow seemed to be carrying and the delightful little parks in the most unexpected places.

Below the Kremlin is Moscow's river—not very wide, not very busy, but giving character to the city, as most rivers do.

The young girls—we saw a lot of them at the exhibition—are becoming more and more fashion conscious. They were wearing cotton dresses with attractive patterns, but always with a cardigan even when the heat was overpowering. The older women are drably dressed. Three-quarter costume coats, very old-fashioned to Western eyes, are worn over dark dresses. Pinafore frocks are worn with heavy blouses. Shoes are plain, but I liked the shapes—no pointed toes.

### "No" for an Answer

One needs a few days to wind down to the Moscow tempo before starting work. It is no use trying to hurry. The Russians answer unexpected questions with "No" while they think what the real answer will be. I am more used to the Italian method where the first answer is always "yes" even if it should be "no." After a few days one falls into the local rhythm. It feels right to wait in the evening to book tomorrow's car knowing you will wait again in the morning to be told its number. Everything can be arranged so long as one has the right pieces of paper. I'm not good with pieces of paper, but I found that friendliness could overcome even the loss of vital documents.

In the hotel everyone was kind—Intourist girls, porters, receptionists all do a wonderful job of trying to keep the visitors happy. My chambermaid was a pet. She knew one or two words of English and was eager to learn more, so every morning we had an English/Russian, Russian/English lesson. She was much better than I was and never forgot anything. She had a "thing" about Benson and Hedges cigarette boxes so I collected a large number for her and was rewarded with a delighted smile and a handshake worthy of a much more valuable gift. After the

cigarette box episode I found the "smalls" were collected daily, washed, ironed and laid neatly in the drawer.

All my Russian guides were obsessed with size. "This is our new swimming pool. It is the largest in Moscow." "This library is the largest in our country." "Our university is the biggest in the world." Perhaps this is not surprising in so vast a country.

We were taken to a picture gallery packed from floor to ceiling with the work of Russian painters. When my guide found that only the ikons appealed to me she was disappointed, but forgave me, saying: "You are not Russian so you cannot understand."

The Armour Museum is an incredible place if you like armour, Fabergé and articles smothered with jewels. The collection must be worth several enormous fortunes. The building itself is impressive, beautifully cared for and carpeted most expensively. Before you make the tour you are given large felt slippers to cover your shoes.

Catherine the Great's wedding dress is here—cloth of silver with a twelve-yard train and a hands span waist.

One room is devoted to coaches, including the Coronation coach with six life-size horses, all white, all perfectly matched. My guide stopped in front of one of the more ancient vehicles. "Here is a coach. It is of English work. It was sent to one of our Czars by Elizabeth the First. You will see that it has no windows, there are no springs, the wheels are inferior and there is no place for a coachman."

### Royal Parsimony?

I could only apologise for the parsimony of Elizabeth I and was then taken to look at another coach. It had windows, it had springs, the wheels were perfect and there was plenty of room for a coachman. It was not "of English work."

Most of the Russians I met were young. I found them friendly, easy to talk to, very eager to tell me about what Russia had achieved, and full of knowledge about the city, art, literature, industry and science. They were, of course, the students hand-picked for the job of looking after tourists. I was impressed by their seriousness and air of dedication, the way they so obviously feel that Russia is theirs and they are one with all Russians. Impressed, but puzzled.

# TRAGEDY AT BATURA

By John I. Edwards

## *Preparations for Ascent*



Simple cross commemorating the dead at the foothills of the Batura Glacier

Only two came back from the 1959 Himalayan expedition whose goal was the massive 25,000 ft. unnamed peak dominating the Batura Glacier. One of the dead was Harry Stephenson of Wilton Works. The other I.C.I. man, John Edwards, also of Wilton, survived to tell this tale.

**I**N the far north of Pakistan, close to the sensitive borders of Afghanistan, Russia, China, Tibet and India, lies a small part of Kashmir which enjoys generally autonomous rule under the watchful eye of the Pakistan government. It is a barren land, a great sea of mountain peaks, many over 20,000 ft., for the most part unmapped and unnamed.

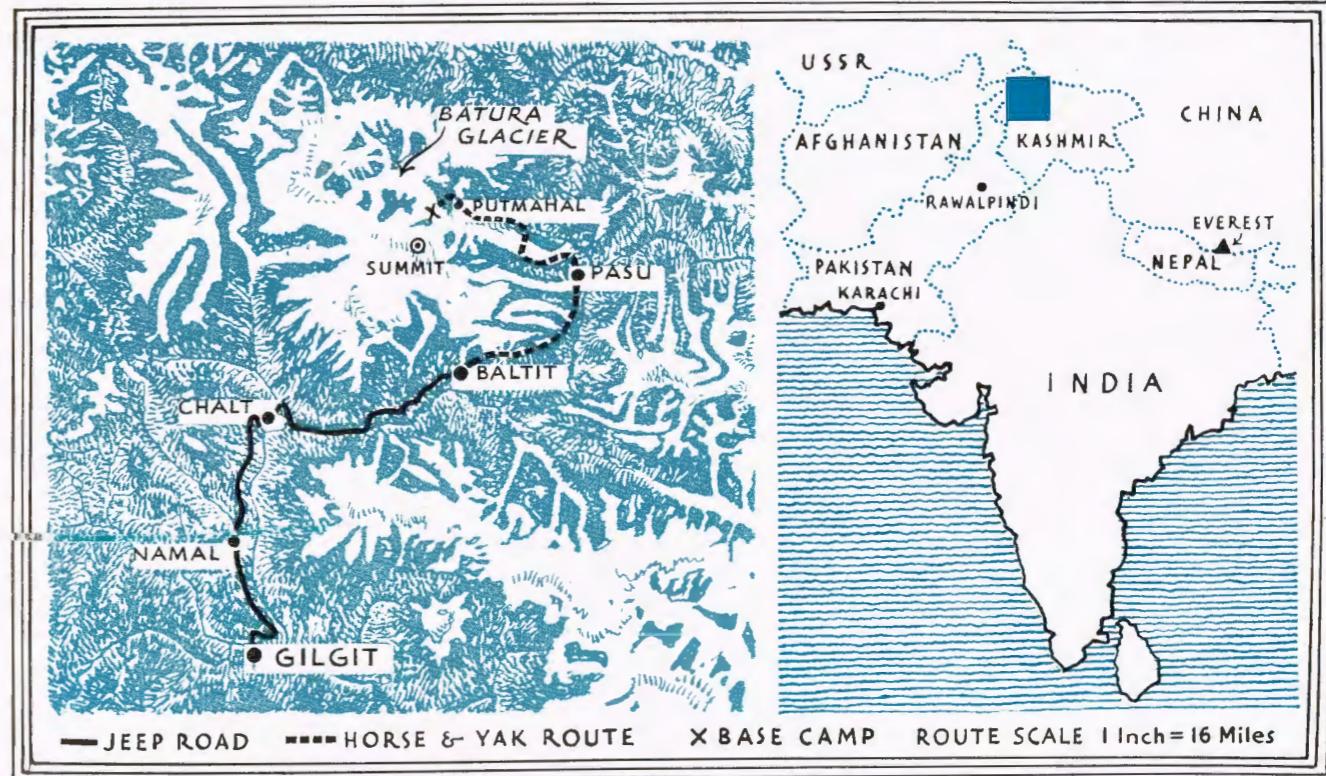
This is the Western Karakoram, the end of the great Himalayan chain which since time immemorial has protected the Indian sub-continent from its rapacious northern neighbours.

There are a few well-guarded gateways through the bastion. In the extreme west, the Khyber Pass is the

narrow door to Afghanistan and southern Russia; and further east the Mintaka Pass is the northern end of the centuries-old caravan route which leads down from Kashgar, the ancient capital of Sinkiang, through Gilgit, and eventually into the rich lands of the northern Punjab.

In May of last year the Batura Mustagh Expedition was slowly making its way north from Gilgit along this route, winding through the narrow valley of the Hunza River which drains the melt streams of the Karakoram into the mighty Indus.

There were seven of us, together with many coolies and about forty horses carrying over three tons of food and equipment. Our goal was the massive 25,540 ft. peak,



unnamed and unclimbed, which dominates the Batura glacier, one of the greatest glaciers in the world.

Behind us lay nearly four years of planning and preparation since Harry Stephenson and Richard Knight had first conceived the idea of this expedition while climbing in the Alps with Martin Günnel, one of Germany's best climbers. I knew Harry, as we both worked at I.C.I.'s Wilton Works, and I had known Dick Knight from a previous expedition to Spitsbergen. The expedition had grown with the addition of Dr. Keith Warburton, our doctor, who became leader because of his great experience in the Antarctic and the Himalayas. We were then joined by Albert Hirshbichler, a brilliant German climber, who was one of the few men to climb the formidable north face of the Eiger. Our last addition was Jamil Sherjan, son of a Pakistani General and a former officer in the Parachute Regiment, who was to help me with the scientific work of the expedition.

### Fate in Balance

Despite months of hard work, the fate of the expedition had been in the balance until early March, when a large part of our funds and the all-important political permission had finally materialised. In April we had sailed for Karachi, where we had been helped on our way by the generous assistance of I.C.I. (Pakistan).

From Karachi we went by train to Rawalpindi and then

a short flight by Pakistan Airways Dakota to Gilgit, covering in two hours a journey which had formerly taken many days. This flight is probably one of the most spectacular in the world. As the plane flew through the narrow valley under the shadow of Nanga Parbat and a hundred other great peaks, I reflected on that other Karakoram, the ancient capital of the Mongols, where Marco Polo had served the Great Khan. Looking at the formidable masses of dark rock rising to the snow-covered ranges beyond, the name, which means "Black Walls," seemed very appropriate.

### Progress by Jeep

From Gilgit we had taken jeeps along the newly constructed road to Baltit, capital of the tiny state of Hunza, where the Mir, a model of paternal autocratic rule, entertained us for a few days while we assembled our horses and coolies for the next stage.

The 30,000 Hunzas are a big question mark for every student of the languages of Asia. Their language, Burashaski, is unlike any other Asiatic language, and it is said to bear a resemblance to Basque. They themselves claim to be descended from a remnant of the Greek troops of Alexander, and "Sikander," as he is known, is probably more real to them than most of the shadowy figures which have dominated the world in the last two thousand years. Formerly Buddhists, this gentle pacifism could not resist



**Harry Stephenson** of Wilton Works outside his tent at base camp. Photo by the author.

the militancy of Islam, and today they are all Ismaili Moslems following the Aga Khan.

In Hunza there is no police force or jail, because there is no crime. Everybody has enough to eat of their simple diet of apricots, chupattis, yak butter and cheese. Life is not hard, and work can always be interrupted at a moment's notice for a polo match, a sword dance or a song. The women have a freedom from purdah and restrictions almost unknown in the orthodox Moslem world, and indeed everything seems so perfect; Shangri-La

springs to mind, and there is a feeling of timeless unreality about the place.

It was with a feeling of real regret that we finished our last magnificent dinner in the Mir's palace with a glass of vintage Hunza Pani, the deceptively potent white wine which comes from the vineyards on the northern bank of the river. All our horses were assembled ready for a morning departure, and we could not postpone the next stage of our journey any longer.

From Baltit the 'road' winds for three days along the

Hunza gorge. It is a narrow track built out from the cliff face by jamming rocks into narrow cracks and then building upwards and outwards, held only by gravity, with no pegs or mortar. As we walked along it, some hundreds of feet above the boiling brown waters of the Hunza River, we marvelled at the skill of the primitive craftsmen who had built it.

#### **Yaks for Horses**

At the village of Pasu, some thirty miles south of the Chinese border, we had to leave the caravan track to travel west, towards the Batura Glacier and then along it. The way would become much rougher and steeper, so in Pasu we exchanged our horses for yaks.

With a massive head carrying a sharp pair of polished horns the yak has a formidable appearance, but it is in reality very docile.

The primitive economy of the Hunzas rests firmly on his broad shoulders. His hooves thresh the wheat, his strength mills the grain, his long hair makes cloth and ropes, his skin makes boots, and yak milk, butter and cheese are staples of the diet; but above all he represents transport. A whole family can ride on his back, on top of all the household goods, and it is fascinating to watch him leap casually over a crevasse with 200 lb. on his back, or delicately pick his way across a steep ice slope, digging the sharp edges of his hooves into the ice. Their slow but massive strength never ceased to amaze us.

To hear old Shah Mohammed, the hunter of Pasu and slayer of a thousand ibex, calling to his labouring animals: "Shabash, O bahadur beposh!—Well done, O noble yaks!" was to feel that perhaps the Hunzas realise something of the debt they owe to these animals.

#### **Summer Migration**

In the summer many of the inhabitants of Pasu move up the Batura valley with their yaks, their goats, their sheep and their families to find good grazing and perhaps grow a crop of wheat on the small patches of ground which are without snow for four or five months. The migration had not really started when we were moving at the end of May, so we were able to use the huts in these various settlements to house ourselves and our yaks.

Apart from travelling along the valley, we were obliged to cross the glacier twice to reach the place we had selected for a base camp. At our second crossing place, at an altitude of 11,000 ft., the glacier was still covered in a deep layer of snow and we found ourselves with a strike on our hands.

The porters refused to cross the glacier, protesting that it was too dangerous. We went out to the middle to have a look on the ice, which was no worse than it had been further down. We tried talking, but without effect, so we

sat down and waited. We also cut the rations (they consumed, among other things, 80 lb. of flour and 5 lb. of milk powder every day), and this, together with an increase in pay, eventually resolved the strike, although the delay cost us two days of valuable climbing time.

At base camp we paid off the coolies, retaining only our three high-altitude porters. The paying-off ceremony was quite festive, and the coolies were improvising dances and singing old songs with all our disagreements forgotten.

It was 4th June when we set up the base camp at a height of 11,200 ft. A ridge of old moraine debris lay to the east to protect us from the frequent avalanches which we had seen on the lower part of the icefall as we approached.

#### **Icefall Obstacle**

The icefall was the main obstacle to be overcome, and it certainly looked very formidable—a broad, tumbling frozen waterfall about 2½ miles wide and 6000 ft. high. At places the ice was descending at speeds of up to 12 ft. per day, so that the surface changed radically from day to day with a dawn chorus of falling ice towers, new crevasses and violent movement. Above this frozen torrent we hoped to make the assault base, an advanced "base camp" at a height of nearly 20,000 ft., which would be adequately stocked and would serve as a jumping-off place for the last 6000 ft. to the summit.

In the first week after arriving at base camp we set up Camps I and II on the icefall at 13,300 ft. and 16,100 ft. respectively, although with the rapid motion of the ice we felt it was a little like going up the "down" escalator, and we were losing altitude every day.

Camp I was on top of a tall, mushroom-shaped serac or ice tower on the north side of the icefall, and because of its situation it became known as Noddy's House. Route-finding is always most difficult at the side of the glacier, where the high relative velocity leads to considerable turbulence, and Camp I acted principally as a bridge on to the icefall. It was reached by a steady climb on snow-covered moraine, a long rock traverse interrupted by several interesting ice-filled gullies, and a hard slog across the packed ice of old crevasse slopes at the side of the icefall, where frequent stone falls often produced an unexpected turn of speed in heavily loaded and very tired climbers.

#### **Nervous Shuffle**

To reach Camp I itself necessitated a nervous shuffle across one of our light aluminium ladders which spanned a formidable crevasse. From Camp I another ladder crossing led to a well-marked route through a maze of seracs and on to the centre part of the icefall, where the going was a little easier.

For the first few days the five climbers, assisted by the three porters, were busy stocking Camps I and II while Jimmy and I did survey work.

Life at base camp was not without its excitements. We soon became used to the massive avalanches which crashed down a mile-high rock wall on the other side of the icefall and then rolled across the valley floor as a cloud of swirling snow debris. These occurred about six or seven times a day. The sixty-mile-an-hour cloud would fade or swing away before it could get across the three miles of open ice and the high moraine which led to our camp.

One morning, however, the routine was changed. I was just sliding out of my tent at about 5.30 a.m. when I saw a large mass of ice at the top of the rock wall break away for what promised to be a most spectacular avalanche. The cloud did not break up crossing the icefall and seemed to be approaching the camp with undiminished speed. When it was about 400 yards away I called to Jimmy, who was still asleep. He stuck his head out of the tent, but when he saw what was coming he quickly pulled it in again. He was still struggling with a jammed zip at his end of the tent when the cloud was upon us. The tent collapsed as with a tearing, shattering roar the avalanche whipped across the camp site.

In a few moments it was all over and I was able to pull myself out of the tent, which was full of the snow which had poured in through the jammed flap. The camp looked very different under its covering of snow. The big mess tent had disappeared, and with it had gone all my glaciology notes and a newspaper article I was writing. We found the tent about 100 yards away buried and torn but with its pneumatic tube supports still intact. It was re-erected and patched with sticky tape, and we searched the area for the rest of our belongings and equipment. The avalanche made a good talking point when we met the rest of the party once again.

A few days later some rain started the porters complaining. Their clothing was not as good as the climbers' because it was not intended they would go so high, but one of them proved particularly troublesome and demanded more clothing and money, under the impression that we considered the porters indispensable. Unfortunately, he was the only one to speak Urdu and acted as interpreter for the other two, so it did not take long for him to bring them on to his side. He then went on strike. We had already given them much more than the amounts laid down by the Pakistani authorities, and as capitulation would only have been followed by further demands, we sacked them, much to their surprise.

Jimmy and I now joined the climbers, and as the members of the expedition usually carried 60 lb. compared with the porters' 45 lb. the party was not really weakened.

#### A Typical Day

A typical icefall day would start at Camp I with the alarm clock ringing at 2.15 a.m., followed by a shout to wake the cooks, Dick and Martin, who were sleeping in a slightly larger tent than the rest of us. This was consequently used for cooking and eating. They would light a couple of paraffin stoves and put on pressure cookers filled with snow to make the morning coffee and porridge. This, together with biscuits spread thickly with margarine and jam, formed our breakfast. While porridge was being prepared, the rest of us would drag ourselves out of our sleeping bags and grope in the darkness for our boots, overboots and down jackets before emerging into the bitter cold to walk the few steps to the comfortable warmth of the mess tent. All seven of us would somehow get in, and by the light of a couple of candles breakfast would hurriedly be consumed.

Washing up is a problem which does not really exist at high altitudes, as a swift wipe with snow or a paper handkerchief had everything ready for the next meal.

Crampons (steel spikes attached to the boots to give a grip on ice) were not allowed in tents because of the potential damage to tents, air mattresses and down jackets, so the next stage was to find your crampons, massage the frozen straps, and buckle them with chilled fingers on to the huge, down-insulated boots.

#### Early Start

By about 3.30 a.m. the loads we had made up the previous evening would be shouldered and the lunch packets issued, and we would be off in the dim light, slowly climbing among the seracs and crevasses of the icefall towards Camp II some 3000 ft. higher. At 4 o'clock the first rays of the sun would suddenly strike the peak of the Batura Mustagh far above us. The ice-covered cone tinged with pink would stand out with startling clarity against the intense dark blue of the sky behind, and we would perhaps pause for a moment to capture some of the vast lonely beauty of this strange world in which we climbed. Moments such as these, when life has a sharp, clear purpose, remain forever in the memory, tugging at the heart-strings to draw us back to the lonely quiet places of the world.

#### Change of Temperature

As the sun rose higher, the edge of the shadow would gradually creep down towards us, and from the crisp freshness of the early morning we would suddenly be plunged into the full heat of the day.

The frozen snow underfoot which had given a firm bite to the crampons would become mushy, so that boots were sinking and sliding and anoraks and sweaters would



Crossing the Batura Glacier on the way to base camp. The goat is taken along by the porters to provide them with meat. Photo by Keith Warburton.

rapidly come off, so that we were climbing in shirt-sleeves. The purpose of the early start was to do as much climbing as possible before the sun added to our difficulties.

At this altitude sunburn is a major problem, and our faces were soon burnt and peeling in spite of a thick layer of glacier cream and lip salve. The cream rapidly wore off the backs of my hands, so that in two days they were stripped of skin and I had to keep gloves on all the time.

Our progress towards Camp II would become slower as tiredness, heat and altitude began to take effect. The first time I made the 3000 ft. ascent to Camp II it took me seven hours, forty minutes for the first 1000 ft. and twenty minutes for the last 30 ft.! Towards the end of the climb I timed myself "flat out" at twenty steps to the minute, with a long rest every two minutes. After three days I became acclimatised and could do the journey comfortably in 3½ hours.

At Camp II we would rest for about two hours and then climb back down to Camp I, arrange our loads for the following day and prepare supper at about 4.30 p.m. This was usually stew in our biggest pressure cooker, augmented by our own specialities—cheese and H.P. sauce mashed up and spread on biscuits, or a mixture Martin prepared of snow, crushed glucose tablets, lemonade powder, sugar and milk powder. It was supposed to resemble ice cream.

After supper we "undressed" to the extent of removing our boots, and by six we would all be well down in our sleeping bags. This routine was followed for four or five days until all the necessary stores were up to Camp II.

To be continued next month

# Land of *Costumbre*

By George Ordish

**It is a land passed over by the modern age, where life is ruled by maize, market, and *costumbre*. It is the land of a gentle Indian race moulded by Spanish civilisation. It is Central America.**

A NEW slave trade is now growing up: it is the farming out of technicians, or so-called "experts," to undertake temporary work for organisations needing various forms of technical advice. Recently I was such a one, being loaned to the United Nations Organisation to make a pesticide survey in Central America, a very fascinating part of the world.

It is not usually realised that there are three Americas—North, Central and South. Central America consists of the republics of Guatemala, El Salvador, Honduras, Nicaragua and Costa Rica and our colony of British Honduras, or Belize as it is usually called. It is important to bear this zoning in mind, for people resent being attributed to the wrong area; especially Mexicans, who dislike being called even Central Americans, as they are in North America. South America starts with Colombia, for Panama, though not "Central," is still not "South" but an entity on her own.

The Central American republics, lying in the tropics, are countries of great contrasts from many points of view. On the map they look small, because we tend to think of our old schoolroom Mercator's Projection, which so exaggerates the size of Canada and Russia; actually they are together about twice the size of the United Kingdom but hold only some ten million people, which is of course very little compared with Britain.

The topography is contrasting, too. The chain of the Rocky Mountains continues down through the area until it becomes the Andes in South America, leaving a coastal plain of alluvial soil on both the Atlantic and Pacific sides and a high central area split into a series of attractive valleys, lakes, plains and

mountains. The climate is similarly contrasting: the coastal belts are hot and humid; the highland areas are cool. In Guatemala, for instance, the highland climate is so equitable that it is known as the land of eternal spring.

The wealth of the area is its agriculture, and here again there are big differences in the crops grown, the coastal plains providing bananas, tropical fruits, cotton and rice, and the cool interior having maize and other cereals, coffee, and the famous chicle, the rubbery-like sap of a forest tree which makes chewing gum, for gum-chewing is an American Indian habit.

It was the maize plant which allowed the considerable degree of civilisation to arise in Central America before the Spaniards reached there (in the late fifteenth century), for it is easily grown and produces big crops, so that every man did not have to spend all his time in growing food or in hunting to support himself and his family. It is when leisure arises that civilisations can develop, for men have time to think and dream.

The Maya civilisation in Central America grew rapidly and showed some remarkable contrasts, and advances as well, for Mayas were intensely interested in things of the spirit and mind and not greatly in technology. They made paper and wrote books on long folded strips of it in a characteristic picture writing; they had an accurate calendar and always knew when and where the sun, moon and planets would rise and set, which was of importance to their rather astrological religion; they had even invented the very difficult intellectual concept of the zero, together with a mathematical notation on a base of twenty; with no hard metal they built enormous stone temples and pyramids; but they had not invented such simple

*Photograph on next page taken by D. Sauri with a Leica IIIf camera, Sumicron f2 lens, Ektachrome daylight film, exposure f11 at 1/100 sec.*



things as the wheel, the arch and money, and had only two metals, gold and a small amount of copper.

The Mayas were a gentle race compared with their fierce neighbours the Aztecs of Mexico, who at the time of the arrival of the Spaniards were gradually conquering the remaining tribes in the area. The main reason for Cortez's success was that he had the support of so many other Indians when fighting the Aztecs.

The Spaniards settled in Mexico and Guatemala, and today one can still see the remains of the beautiful churches, schools, monasteries and convents and fine towns that they taught the Indians to build, and in these one can see how the Indian workmen mixed their own symbols of the maize and the serpent with the Christian ones of the Cross and halo.

The Spanish yoke was thrown off in the early nineteenth century; immigrants came from Europe, and eventually the five republics and the British Colony were formed; but the Indian is still there, and on the whole still patiently resisting the force of change. In Guatemala, for instance, about 80% of

the population is Indian. They have their small farms way up in the hills, a maize patch, a few chickens, a pig and some vegetables, and usually once a week they will trudge perhaps ten miles to market carrying a fantastically heavy load—perhaps some pots they have made or even just firewood. They have always done this. The modern world passes them by—they are a republic, they have a vote—but this is not important. What really counts is the maize, the market and the *costumbre* (custom). This is the word that rules the Indian's life: it may be the only Spanish word he knows, but in any case if a thing is not his *costumbre* he will not do it.

The market is a great social occasion. You can stop an Indian on the road and offer to buy his load of wood for, say, twice the price he could hope to get in the market; but he will not sell it to you. Perhaps he thinks there is a wood famine and the price should be four times the normal; perhaps he just wants the excitement of the market and to attend church. In many of the churches two religions are in effect



Indian market at Chichicastenango, Guatemala

practised at the same time. On Sundays at one end the white priest is baptising the children, while on the floor of the church the Indians are putting hundreds of small candles in rows and dropping flower petals among them, the Indian *brujo* leading a chant at the same time. The spirit of the market, though, still prevails in church, for in buying a candle one bargains for it, though in a rather more hushed tone.

These Indians are mostly placid, happy people, and they are poor; on the other hand, the big coffee growers, farmers and merchants are rich—a contrasting position which is usually found in underdeveloped countries (but what with worrying over communism and the price of coffee, the rich are probably not any happier). This state of affairs is changing rapidly, and it is part of the United Nations' task to help and speed up this change, to introduce better methods of agriculture, to introduce fertilizers and pesticides, to control malaria, and to build roads and establish industries, electricity plants and so forth in order to raise the standard of life throughout the area.

These countries are beautiful and mostly thinly populated; most of the zone has an agreeable climate, and much is unknown in them. We do know they have good volcanic soils, that there is some zinc, lead, gold and silver; there may well be oil, but even with their present known resources one cannot but feel that here is an area with an important development potential. The population is increasing, there is a desire for a better living standard; there are many

difficulties to be overcome; but it is likely that a customs union will be formed, and one cannot but feel that these are countries with a big future, where developments are going to take place and where the machinery of progress will be installed. A middle class of trained artisans is arising to serve the new factories, machines and roads, but around all this feverish activity is the enigmatic Indian trotting along the road to market. If he decides some new method or crop is not his *costumbre* it will take a long time to introduce it.

For instance, hybrid maize was not a success, for, while it will give three times the crop of the native maize, new-bred seed must be sown each year, and the Indian could not adopt the idea of not sowing his own seed.

While the Indian may appear to accept so many things—Christianity, the vote, money, the motor bus—and may even accept such controversial future benefits as television, one cannot help feeling he is really still bound by his pre-conquest horizon—the *costumbre* of his old Maya life and gods.

It is this very state of affairs that makes these countries of such consuming interest, an interest which really falls under three headings: the immense possibilities of developing the area; the strange history of the countries, both before and after the conquest; and the influence this history and outlook is going to have on future development. In any case, this vacuum of underdevelopment cannot long remain unfilled.





Giffre Valley, French Savoy Alps

Photo by H. T. Phillips (General Chemicals Division)